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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

WERNER, BRIAN P

ART UNIT

PAPER NUMBER

2621

DATE MAILED: 09/18/2002

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/832,534

Applicant(s)

ROWE ET AL.

Examiner

Brian P. Werner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12-44 and 46-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-44 and 46-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 09 August 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) ✓ ✓
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 10, 12.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The amendment received on June 28, 2002 has been entered. Claims 1-10, 12-44 and 46-48 remain pending. In response to the amendment, the previous drawing and specification objections are withdrawn.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

3. Claims 10, 12, 15-18, 20, 33-39, 42-44, 47 and 48 are rejected under 35 U.S.C. 102(e) as being anticipated by Wunderman et al. (US 6,122,042 A). The rejection advanced in the previous Office Action is incorporated herein by reference; the details of which will not be repeated. Regarding the new limitations added to claims 10,

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33 and 47, Wunderman teaches that optical radiation reflected from sub-epidermal tissue is measured ("optical subcutaneous identification" at column 37, line 62; the energy is reflected from the tissue as depicted in figure 1B; i.e., the optical energy is "retroreflected" at column 11, line 61).

4. Claims 1, 21 and 46 are rejected under 35 U.S.C. 102(b) as being anticipated by Stoianov et al. (US 5,761,330 A). The rejection advanced in the previous Office Action is incorporated herein by reference; the details of which will not be repeated.

5. Claims 1, 21-25 and 46 are rejected under 35 U.S.C. 102(e) as being anticipated by Toyoda et al. (US 5,999,637 A). The rejection advanced in the previous Office Action is incorporated herein by reference; the details of which will not be repeated.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-3, 6-9, 19, 21-26, 29-32 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Wunderman et al. (US 6,122,042 A) and

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Hoshino et al. (US 4,944,021). The rejection advanced in the previous Office Action is incorporated herein by reference; the details of which will not be repeated.

8. Claims 1, 21, 27 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Prokoski et al. (US 5,163,094) and Hoshino et al. (US 4,944,021). The rejection advanced in the previous Office Action is incorporated herein by reference; the details of which will not be repeated.

9. Claims 10, 12-14, 20, 33 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Messerschmidt (US 5,655,530 A – cited by applicant), Robinson et al. (US 4,975,581 A – INCORPORATED BY REFERENCE IN MESSERSCHMIDT at Messerschmidt column 2, line 50; i.e., “The disclosure of Robinson et al. is incorporated herein by reference”; also cited by applicant), and Peterson et al. (US 6,330,346 B1). The rejection advanced in the previous Office Action is incorporated herein by reference; the details of which will not be repeated.

10. Claims 1, 3-5, 19, 21 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Messerschmidt (US 5,655,530 A – cited by applicant), Robinson et al. (US 4,975,581A – INCORPORATED BY REFERENCE IN MESSERSCHMIDT at Messerschmidt column 2, line 50; i.e., “The disclosure of Robinson et al. is incorporated herein by reference”; also cited by applicant), and Peterson et al. (US 6,330,346 B1) as applied to claims 10, 12-14, 20, 33 and 47 above,

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and further in view of Hoshino et al. (US 4,944,021). The rejection advanced in the previous Office Action is incorporated herein by reference; the details of which will not be repeated.

11. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Wunderman et al. (US 6,122,042 A) and Itsumi et al. (US 5,559,504). The rejection advanced in the previous Office Action is incorporated herein by reference; the details of which will not be repeated.

12. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Wunderman et al. (US 6,122,042 A) and Hoshino et al. (US 4,944,021) as applied to claim 21 above, and further in view of Itsumi et al. (US 5,559,504). The rejection advanced in the previous Office Action is incorporated herein by reference; the details of which will not be repeated.

13. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Wunderman et al. (US 6,122,042 A) and Prokoski et al. (US 5,163,094 A). Wunderman does not disclose the number of optical spectra in the enrollment database as equaling one. Prokoski discloses a system in the same field of biometric identification, comprising an enrollment database ("facecard bearing the subject signature" at column 7, line 37), where a number of enrolled biometric in the database is equal to one (only the biometric data of the person holding the card is stored in the

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card). It would have been obvious at the time the invention was made to one of ordinary skill in the art to provide the database of Prokoski, to the individual seeking identification according to the system of Wunderman, in order to provide a portable media to the individual for subsequent verification at checkpoints, such as at an "entry door" (Prokoski, column 7, line 34).

Response to Arguments

14. Applicant's arguments filed with the amendment on June 28, 2002 have been fully considered but they are not persuasive.

The previous drawing and specification objections have been withdrawn, thus rendering applicant's response moot.

35 U.S.C. 102 rejection – Wunderman et al.

Applicant argues that Wunderman fails to disclose "obtaining target tissue spectral data that includes measuring optical radiation reflected from sub-epidermal tissue of said target individual" at response page 12, first paragraph.

In response, it is noted that the examiner relied upon the embodiment of figure 12 in previous Office Action. Wunderman states, "FIG. 12 illustrates a useful application of the IDEA probe for rapid identification of human individuals" (column 37, line 55), and "tissue between the fingers does not often interact with foreign objects it presents a

preferable and convenient region of the body to uses for optical subcutaneous identification" (column 37, line 61). That is, each of the elements argued by applicant as being deficient in Wunderman, are in fact completely anticipated by Wunderman as follows: obtaining target tissue ("tissue" at column 27, line 60) spectral data ("IDEA probe" at column 37, line 63; the IDEA probe obtains spectral data; i.e., "spectroscopic identification" at column 2, line 64) that includes measuring optical radiation reflected from sub-epidermal tissue (as depicted in figure 1A; also "subcutaneous identification" (column 37, line 62) of said target individual ("human individuals" at column 37, line 56). **This embodiment of the Wunderman reference is a clear anticipation of the claimed subject matter.**

Applicant argues that "it is clear that this disclosure is limited to mechanical subcutaneous identifications" at response page 12, second paragraph.

In response, the examiner has mentioned nothing about the mechanical aspect of figure 12. The embodiment of figure 12 incorporates two disparate types of information for purposes of identifying an individual. The first type is mechanical data from potentiometers. **This supplemental feature of the Wunderman disclosure is irrelevant to the examination. After all, the claims are open ended and do not preclude a prior art references from incorporating additional, peripheral, or supplemental features.** The second type of identification relies upon the "IDEA probe" (Wunderman, column 37, line 63) as an "IDEA identifier" (Wunderman column 37, line 67; i.e., "the RADEL/PIXEL OSV part of the identification" at column 38, line 56). The IDEA identification relies upon the optical spectrographic properties of subcutaneous

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tissue, as explained in the previous Office Action and above. Applicant, in his arguments, has ignored this aspect of the Wunderman reference (i.e., the IDEA type of identification) as it pertains to the embodiment of figure 12. The examiner reminds the applicant of his responsibility to read and understand not only the entire disclosure of Wunderman as it pertains to figure 12, but the entire disclosure taken as a whole. In summary, Wunderman completely, clearly, and fully anticipates the elements of applicant's claimed invention. Examiner suggests a complete review of the Wunderman reference, and of the examiner's thorough and complete action on the merits as advanced in the previous Office Action.

35 U.S.C. 102 rejection – Toyoda et al.

The previous rejections of claims 10, 33-38 and 47 based on the Toyoda reference are withdrawn, in light of the amendment. The rejection of claims 1, 21-25 and 46 remain; and because applicant does not address any particular claim in the arguments, the examiner will refer to claim 1.

Applicant argues that Toyoda "refers to spatial Fourier spectra" and does not "mention multiple wavelengths in this regard", and that the "claimed method and apparatus of the claimed invention are based on a measurement of the optical property of tissue measured at a plurality of wavelengths, resulting in optical spectra" and "this property of interest exists below the external surface of the skin" at response page 13, first two paragraphs.

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In response, claim 1 recites “means for obtaining at least one tissue optical spectral data” where the spectral data has “a plurality of measurement values” at lines 6 and 7. The claim does not further limit the term “tissue”, “optical”, or “spectral data” to any particular type of tissue, any particular type of optical measurement, or any specific spectral band or wavelengths. Toyoda illuminates and optically captures an image of a fingerprint as depicted in figure 1 (i.e., a finger is illuminated by numerals 2a and 2b, and optically captured by numeral 4). A finger, and particularly a fingerprint, is made of skin, and skin is tissue. The claim does not define whether the skin is epidermal, or subcutaneous, or otherwise. While the “property of interest” as argued by applicant may exist below the skin’s surface, this is not claimed. Independent and dependent claims do exist that further limit the tissue to “sub-epidermal tissue” (e.g., claim 2), and these claims are not rejected over Toyoda. The fact that dependent claims further limit the definition of “tissue” as it pertains to the invention is solid evidence that the “tissue” of claim 1 is broader than that of “sub-epidermal” tissue, and is thus anticipated by the skin of a fingerprint. Regarding the fact that Toyoda obtains “spatial” spectra, there is nothing in claim 1 that precludes this.

35 U.S.C. 102 rejection – Prokoski et al.

The previous rejections of claims 10, 33, 40 and 47 based on the Prokoski reference are withdrawn, in light of the amendment.

35 U.S.C. 102 rejection – Stoianov et al.

The previous rejections of claims 10, 33 and 47 based on the Prokoski reference are withdrawn, in light of the amendment. The rejection of claims 1, 21 and 46 remain; and because applicant does not address any particular claim in the arguments, the examiner will refer to claim 1.

Applicant's arguments directed against Stoianov are substantially the same as those directed to Toyoda, and the examiner's response is the same. That is, claim 1 does not further limit the term "tissue", "optical", or "spectral data", and thus Stoianov meets all of the requirements.

Summary of the 35 U.S.C. 102 Rejections

The above, disparate references were applied to the claims in order to exemplify the breadth of the claims. **Again, and in summary, the scope of claim 1 (and other claims) does not preclude the following: The claim does not require any particular type of "optical" measurement, the claim does not preclude any type of "tissue", the claim only requires a "plurality of wavelengths" without defining any particular wavelengths or ranges, and the claim does not preclude the measurement of external tissue. The fact that the dependent claims are further limiting by requiring specific optical measurement, specific wavelength ranges, subcutaneous measurement, etc. is solid evidence of this.**

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35 U.S.C. 103 rejection – Wunderman et al. and Hoshino et al.

Applicant argues that Hoshino “fails to remedy the shortcomings of Wunderman et al. as described above.” In response, Wunderman has not shortcomings as the examiner has described above.

35 U.S.C. 103 rejection – Prokoski et al. and Hoshino et al.

Applicant argues that Hoshino “fails to remedy the shortcomings of Prokoski et al. as described above.” With respect to the rejection of claims 1, 21, 27 and 46 over the combination of Prokoski and Hoshino, Prokoski does not have shortcomings. Examiner agrees that Prokoski does not anticipate the limitations of claims 10, 33 and 47. This is because the claims were amended to require the measurement of spectra from “sub-epidermal tissue” (this is why the 35 U.S.C. 102 rejections of these claims were withdrawn). However, Prokoski still anticipates the limitations of claims 1, 21, 27 and 46 because these claims have not been amended, and do not require spectra from “sub-epidermal tissue”.

35 U.S.C. 103 rejection – Messerschmidt, Robinson et al. and Peterson et al.

Regarding this combination, applicant argues that “this requisite motivation to combine the references is not present in the cited references” and that “the requisite expectation of success to combine the references is not present” at response page 15.

Regarding the motivation and expectation of success, a brief review of the combination would be helpful. Messerschmidt discloses a system for the subcutaneous measurement of tissue spectra, exactly in the manner claimed and disclosed by the applicant. Messerschmidt does not teach is the use of these measurements for purposes of identifying an individual (e.g., “positively verifying said target individual’s identity” at line 14 of claim 1). Peterson teaches a system for identifying an individual based on the measurement of tissue spectra, in a manner very similar to that of Messerschmidt. In fact, Peterson teaches “detecting the subcutaneous conditions and/or structure of a living organism” (Peterson, column 1, line 13) by measuring reflected infrared light using a “light-emitting source” and “light-detection element” (Peterson, column 2, line 8) operating in the “720-750 nanometers ... 850-1000 nanometers” wavelength ranges (Peterson, column 3, line 16). In the rejection, the examiner advanced the proposition that it would have been obvious to one of ordinary skill in the art to utilize the subcutaneous measurement system disclosed by Messerschmidt, for the purposes of verifying the identity of a target individual as taught by Peterson, in order to (quote from the previous Office Action, paragraph 13):

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"provide Messerschmidt with the additional, and beneficial function of "reliably" detecting the identity of an individual using a method that is "not easily tampered with" (Peterson, column 1, lines 38-39), is inexpensive (Peterson, column 1, line 42) and "can be used or readily placed in a large variety of structures without a great deal of physical alteration" (Peterson, column 1, line 45). Likewise, the reverse of the above combination would have also been obvious. That is, it would have been obvious to utilize the subcutaneous measurement system of Messerschmidt, in order to measure the "subcutaneous conditions and/or structures of a living organism" as required by Peterson (i.e., column 1, line 12), in order to provide an "improved optical interface between a sensor probe and a skin surface or tissue surface of the body containing the tissue to be analyzed" (Messerschmidt, column 5, line 53) which uses an "index matching medium [that] increases the repeatability and accuracy of the measuring procedure" (Messerschmidt, column 8, line 16)."

Not only did the examiner address a modification of Messerschmidt according to the teaching of Peterson, but the examiner also addressed a modification of Peterson according to the teaching of Messerschmidt. The motivation was quoted directly from the references themselves, even though this is not required. This type of motivation (i.e., from the references themselves) is the most powerful, and compelling. For example, it would have been obvious to utilize the subcutaneous measurement system of Messerschmidt, in order to measure the "subcutaneous conditions and/or structures of a living organism" as required by Peterson (i.e., column 1, line 12), in order to provide an "improved optical interface between a sensor probe and a skin surface or tissue surface of the body containing the tissue to be analyzed" (Messerschmidt, column 5, line 53) which uses an "index matching medium [that] increases the repeatability and accuracy of the measuring procedure" (Messerschmidt, column 8, line 16). **Not only do the references address the same, very specific field of endeavor of subcutaneous measurement using optical wavelengths, the motivation for utilizing the**

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Messerschmidt method is taken directly from Messerschmidt. Regarding an expectation of success, there is no reason to believe, and there has been no evidence submitted by the applicant, that utilizing Messerschmidt's system of measurement would not be fully successful when combined with Peterson's requirement for the same type of measurement. In fact, Messerschmidt even describes how his method is superior to many prior art methods (e.g., "increases the repeatability and accuracy of the measuring procedure" at Messerschmidt, column 8, line 16). Success of this combination is fully expected. In addition, it is noted that references are never literally combined; for if they were, very few 103 rejections would ever be upheld, or even advanced by the Office. It is "teachings" that are combined, and the success of such teachings is analyzed with respect to the level of skill in the art and in this case, the level of skill is as high as it gets.

Remainder of the 35 U.S.C. 103 Rejections

Applicant argues that Hoshino fails to remedy the shortcomings of Messerschmidt, Robinson and Peterson, Itsumi fails to remedy the shortcomings of Wunderman, and Itsumi fails to remedy the shortcomings of Wunderman and Hoshino. In response, neither Messerschmidt, Robinson, Peterson nor Wunderman have any shortcomings as described by the examiner above.

Conclusion

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian P. Werner whose telephone number is 703-306-3037. The examiner can normally be reached on M-F, 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H. Boudreau can be reached on 703-305-4706. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Brian Werner
Patent Examiner
September 16, 2002



**BRIAN WERNER
PATENT EXAMINER
ART UNIT 2621**